



Newsletter

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At the Arboretum

We invite "Summer Scientists" — both children and adults — to visit three new free attractions at the Arboretum:

- At the Gifford House Visitor and Education Center, get an eye-level view of a living pond ecosystem.
- At the Outdoor Science Center, behind the Gifford House, do simple experiments in our "mini-ponds." Four afternoons a week, OSC staff will be there to help you with the experiments, and with microscopes that give you closer looks at tiny animals and plants from the ponds.
- In the lobby of the Plant Science Building, see a display that describes the work of the Institute and depicts four ecosystems. This display is open on weekdays from 9 A.M. to 4 p.m. (Starting this fall, it will be available to travel to other exhibit sites.)

The IES Newsletter is published by the Institute of Ecosystem Studies at the Mary Flagler Cary Arboretum. Located in Millbrook, New York, the Institute is a division of The New York Botanical Garden. All newsletter correspondence should be addressed to the Editor.

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Cary Conference 1991 Looks at Human Impacts

One of the scientists attending the May 1991 Cary Conference at the Institute of Ecosystem Studies suggested that if aliens were to land on Earth 2000 years from now and excavate an ecologist's office somewhere in North America, those extra-terrestrials might conclude that there were few humans on the planet during the 20th century . . .

Why is this? Historically, North American ecologists have considered natural history as a world apart from humans. They have held that nature is self-regulating, and that humans are to be considered only if they create disturbances that upset nature's balance.* Because of this belief, human-related subtle ecological effects — those without obvious immediate consequence

— have been neglected, with the result that a major component of the ecosystems of this continent . . . the human component . . . has been virtually ignored. This is a serious omission because "populated" systems, from an ecological perspective, include sparsely inhabited areas that are managed or manipulated by people, and such areas cover vast amounts of land.



Dr. Emily W.B. Russell, an ecologist and historian at Rutgers University, talks with IES aquatic ecologist Dr. David L. Strayer during a break between sessions at the 1991 Cary Conference.

The fact that many ecological studies in North America have excluded humans is precisely what inspired the topic for the 1991 Cary Conference, *Humans As Components of Ecosystems: Subtle Human Effects and the Ecology of Populated Areas*. Of course, human impacts on ecosystems have not been ignored totally: ecologists have been studying the conspicuous (and often negative) effects of humans for some time, with research on the impacts of acid rain, water pollution, habitat destruction and so forth. These kinds of studies frequently are categorized as applied research, in which data are collected with a specific application in mind. In basic research, on the other hand, data are collected in order to know more about a subject. These data may be applied to a specific question later on, or may serve primarily as part of a pool of background information. It is basic research on human interactions within ecosystems that has been neglected.

** The concept of the "balance of nature" is being re-evaluated in light of recent findings, and there is a developing conviction that nature is ruled more by flux, and is influenced by disturbance. This shift helps to make the discipline of basic ecology more ready to deal with the reality of human effects on ecosystems.*



Dr. Clive G. Jones (l.), a chemical ecologist at the Institute, and Dr. David L. Wigston, an environmental historian from Northern Territory University in Darwin, Australia.

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Cary Conference, from page 1

Subtle human effects include a range of often inconspicuous or unexpected interactions between humans and ecosystems . . . the human-introduced animal or plant that ultimately changes the local ecosystem . . . the land use in 1891 that caused the woodlot behind your home to be the way it is 100 years later . . . the gradual and unsuspected destruction of stratospheric ozone ("the Ozone Hole") by chlorofluorocarbons from aerosol spray cans, refrigerants and the production of foam products. The list goes on.

At a formal dinner at the IES greenhouse on the first night of the conference, the keynote address was given by three representatives from Biosphere 2, the largest self-contained sealed ecosystem ever created. The facility, located in Arizona, comprises five "wilderness" biomes, an intensive agriculture biome and a human habitat; its eight resident researchers will remain isolated from any material exchange with the outside environment for two years. The primary purpose of Biosphere 2 is to provide the opportunity for

significant long-term studies of the maturation and dynamics of its ecosystems. The special relevance of the project to the Cary Conference is its potential for study of entire complex ecosystems in which humans are an integral part.

On the third and final night of the conference a panel of four participants presented an overview, emphasizing the need for an appreciation among ecologists of the study of humans as components of ecosystems. Conference proceedings, including the text of all presentations and the summations by conference organizers and panelists, will be edited by Drs. McDonnell and Pickett and published as a book in early 1993.

* * * * *

Cary Conferences have been held at the Institute every other May since 1985, each focusing on a different topic relevant to the methods and goals of ecosystem science. Funding for Cary Conference 1991, as for the three previous conferences, was provided by grants from the Mary Flagler Cary Charitable Trust and the National Science Foundation.

Jan R. Mittan, conference coordinator, worked with steering committee co-chairmen Drs. Steward T.A. Pickett (l.) and Mark J. McDonnell to plan and direct Cary Conference 1991.



The Institute library doubled as a dining area during the conference. Here, Dr. Jane V. Hall (l.), a professor of economics at California State University, eats breakfast with Dr. Christine Padoch, an anthropologist with The New York Botanical Garden's Institute of Economic Botany. Dr. Padoch served on the conference steering committee

It was a need to bring these subtle human effects to the attention of ecologists that drove Cary Conference 1991. Organized by Institute ecologists Dr. Mark J. McDonnell, Dr. Steward T.A. Pickett and Dr. Gene E. Likens, the conference brought together an international body of ecologists as well as representatives from the disciplines of anthropology, economics, geography, history, human ecology and psychology — over 60 participants in all — with the objective of developing "a common language for recognizing subtle human effects and studying humans as components of ecosystems." Speakers from the non-ecological disciplines presented their insights into humans and their institutions, while ecologists and ecological anthropologists who have studied populated areas described their methods and findings. Still other participants described the nature and significance of various subtle human ecological effects, and the application of that knowledge to populated areas.



JILL CADWALLADER

In memoriam: Julie Cale Morgan

When Julie Morgan began her employment at the Arboretum on December 31, 1979, it must have been obvious immediately that here was a woman who would leave her mark. When Julie died on May 19, 1991, after a long illness, it was clear that she had.

As assistant to the scientific staff, Julie played an important role in the research program. A visitor to her office would find her at a desk often stacked with the pages of scientific manuscripts that she was typing. Lists tacked to the bulletin board kept track of upcoming speakers at the Institute's Friday Scientific Seminar Series and the noontime "lunch bunches," programs that she coordinated. At her fingertips were an Audubon engagement calendar along with other calendars and notebooks — as housing coordinator, she referred constantly to these to make sure that all the Institute's scientific visitors, graduate students and summer research assistants had rooms in the dorms. She was a real "people person," interested in everyone and everything. In her free time she loved to read, and was working on a doctoral degree in English literature at Fordham University.

There was a memorial service for Julie at the Institute on May 31. Her friends and family spoke of her contributions to their lives, and to the lives of so many others. In the words of Jay McAninch, a former ecologist at the Institute:

The lesson that I believe Julie would like for us all to take from this day is that we will all be remembered by how we treat the people around us. To honor her will be to speak to someone with whom you've had harsh words, to console someone who has fallen on tough times, to tell someone you've taken for granted that you love them, to stop your busy day to listen to the concerns of your children, to endure someone's less than perfect efforts to serve you, and most of all to smile and take in stride the hand that you're dealt. Thanks for everything, Julie.

* * * * *

Contributions in Julie's name may be made either to the Julie Morgan Memorial Fund, c/o IES, in support of the Institute's library and student programs, or to the Memorial Sloan-Kettering Hospital, 1275 York Avenue, New York, NY, 10021.



JOSEPH S. WARNER

IES Notes

... At the 197th commencement of Union College (Schenectady, N.Y.) on June 16, IES director Dr. Gene E. Likens was awarded an honorary doctor of humane letters degree. College President Dr. Roger H. Hull is shown below at the podium, while Mr. Norton H. Reamer, chairman of the Board of Trustees, slips the doctoral hood over Dr. Likens' head.



UNION COLLEGE

... The National Commission on the Environment has been convened by the World Wildlife Fund and The Conservation Foundation in order to make recommendations that will enable the United States to address urgent environmental problems of the future. At the invitation of Russell E. Train, Chairman of the World Wildlife Fund and of the newly-formed commission, Dr. Likens will participate as a commissioner. Prior to the first meeting of the commission, in March 1991, Dr. Likens submitted a copy of his recent article on "Human-accelerated environmental change" to help serve as a framework for discussion.

... Fifteen Institute staff prepared and served sandwiches, macaroni salad, fruit, ice cream and beverages at a Sunday lunch at the "Lunch Box" in Poughkeepsie, N.Y. Over 200 city residents enjoyed the meal, which was coordinated by IES graduate students Rich Pouyat and Steve Baines and research assistant Ben Peierls, and was made possible by contributions from Institute employees. The Lunch Box is a service of Dutchess Outreach, a United Way agency.

... Arboretum visitors will enjoy a new brochure about the Institute's Perennial Garden. This brochure, written by Bradley Roeller, manager of the display gardens, and designed by Sharon M. Okada, opens to a map and description of 20 different display and demonstration beds. A short introduction outlines the garden's history and explains its purpose: (the garden) "combines a display of attractive and useful plants (and is a place) to study and evaluate plant growth patterns, cultural requirements and ecological relationships." An insert lists seasonal highlights and describes other outdoor living displays at the Arboretum — the little bluestem meadow at the Plant Science Building, the Fern Glen on Lovelace Drive and the woody plant collections along Lovelace Drive and in the Lowlands.

Late summer highlights in the Perennial Garden include:

- *Asclepias* (Butterfly Flower)
- *Geranium* (Cranesbill)
- *Echinops* (Globe Thistle)
- *Physostegia* (Obedient Plant)
- *Buddleia* (Butterfly Bush)
- *Aster*
- *Eupatorium* (Joe-Pye Weed)
- *Sedum* (Live-forever)

CALENDAR

CONTINUING EDUCATION PROGRAM

The **fall semester** begins in mid-September. Classes, workshops and excursions are described in the Fall 1991 catalogue, available at the Gifford House Visitor and Education Center.

SUNDAY ECOLOGY PROGRAMS

Free public programs are held on the first and third Sunday of each month, except over holiday weekends. Programs begin at 2 p.m. at the Gifford House on Route 44A unless otherwise noted*. Call (914) 677-5359 to confirm the day's topic:

(Sept. 1: Labor Day weekend, no program)

Sept. 15: **Life in a Drop of Water**, an activity led by Dr. Michael Pace.

Oct. 6: **Interpreting the History of Local Woodlots**, a walk led by Dr. Charles Canham.

Oct. 20: **How Beavers Change the World**, a walk led by Erik Lilleskov. (*Meet at the Greenhouse parking lot, on Rte. 82.)

Long pants and sturdy shoes with socks are suggested.

In case of inclement weather, call (914) 677-5358 after 1 p.m. to learn the status of the day's program.

IES SEMINARS

The Institute's program of **scientific seminars** features presentations by visiting scientists or Institute staff. Seminars are held at the Plant Science Building on Fridays at 3:30 p.m. Free.

Sept. 13: **Sampling Neotropical Tree Diversity: How Many Hectares Are Enough?**, by Dr. Scott Mori, The New York Botanical Garden.

Sept. 20: Title to be announced. Speaker: Dr. Elizabeth Newell, Hobart & William Smith Colleges.

Sept. 27: **The Myth of Scientific Literacy**, by Dr. Morris H. Shamos, New York Univ.

Oct. 4: Title to be announced. Speaker: Dr. Jan Stevenson, Univ. of Louisville.

Oct. 11: **Overview of Forest Ecosystem Opportunities in the East in Southern Appalachia**, by Dr. Wayne T. Swank,

Coweeta Hydrologic Laboratory, Ohio.

Oct. 18: **Effects of Terpenes on Ecosystems**, by Dr. Jean Langenheim, Univ. of California at Santa Cruz.

Oct. 25: Title to be announced. Speaker: Dr. Rudy Boonstra, Univ. of Toronto.

OUTDOOR SCIENCE CENTER

Explore ecology mysteries at our mini-ponds! Hands-on experiments will help you to find out for yourself what excess nutrients — for example, from agricultural or residential run-off — do to the tadpoles, fish, snails, algae and microscopic animals and plants in ponds. Free programs are given Tuesday through Friday from 2:00 - 4:00 p.m. Call (914) 677-5358 for reservations.

GREENHOUSE

The IES greenhouse is a year-round tropical plant paradise as well as a site for controlled environmental research. There is no admission fee, but visitors should stop first at the Gifford House for a free permit.

GIFT SHOP

Senior Citizens Days: On Wednesdays senior citizens receive a 10% discount on all purchases (except sale items).

Labor Day Weekend: Look for early holiday season bargains.

ARBORETUM HOURS

(Summer Hours: May 1 - September 30; closed on public holidays)

The **Arboretum** grounds are open Monday through Saturday, 9 a.m. to 6 p.m.; Sunday 1 - 6 p.m. The Greenhouse and the Plant Science Building close at 4 p.m.

The **Gift and Plant Shop** is open Tuesday through Saturday 11 a.m. to 5 p.m. and Sunday 1 - 5 p.m. (closed weekdays from 1 - 1:30 p.m.).

All visitors must obtain a free permit at the Gifford House for access to the Arboretum. Permits are available up to one hour before closing time.

MEMBERSHIP

Become a member of the Mary Flagler Cary Arboretum. Benefits include a special member's rate for IES courses and excursions, a 10% discount on purchases from the Gift Shop, a free subscription to the IES NEWSLETTER, and parking privileges and free admission to the Enid A. Haupt Conservatory at The New York Botanical Garden in the Bronx. Individual membership is \$30; family membership is \$40. For information on memberships, contact Janice Claiborne at (914) 677-5343.

For more information, call (914) 677-5359 weekdays from 8:30 - 4:30.

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